Operable Unit 6 Explanation of Significant Differences

ELMENDORF AIR FORCE BASE, ALASKA

3rd Wing Public Affairs (907) 552- 8970 Fax 552-5111 www.elmendorf.af.mil

October 2007

The Air Force, U.S. Environmental Protection Agency (EPA), and Alaska Department of Environmental Conservation (ADEC) cooperated in the preparation of an Explanation of Significant Differences (ESD) which provides notice of certain clarifications to the cleanup decision document (Record of Decision) for these sites. Clarifications are made to the criteria used to operate an existing treatment system, administration of land use controls, and use of a state-mandated cleanup goal for a certain chemical.

Operable Unit 6 Source Areas: LF02, LF03, LF04, WP14, SD15.

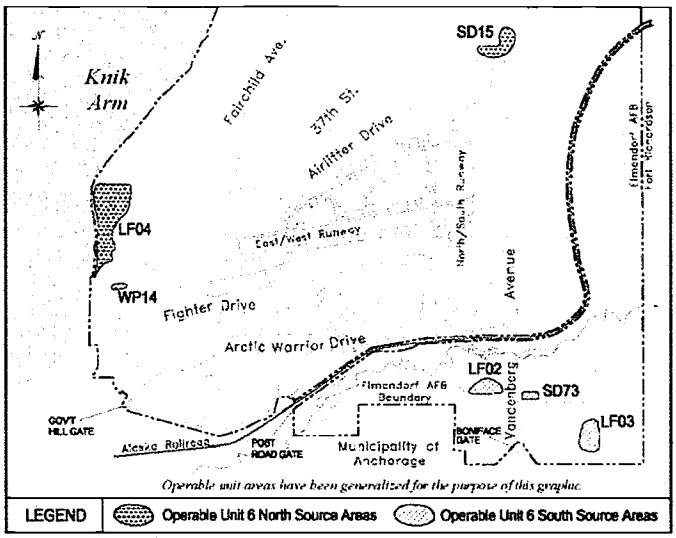
Operable Unit 6 No Further Action Source Areas: SD73.

Contaminant Sources: Landfills; petroleum, oil, and waste lubricant disposal; chemical storage.

Medium Affected: Groundwater, soil, surface water.

Contaminants of Concern Outlined in the Operable Unit 6 Record of Decision: *Operable Unit 6 Groundwater*: 1,2-dichloroethane, methylene chloride, 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, trichloroethene, benzene, ethylbenzene, and toluene. *Operable Unit 6 Soil*: Exposed landfill debris, gasoline-range organics, diesel-range organics, lead, benzene, ethylbenzene, toluene, and xylenes.

Key Milestones	
ACTIVITY	***DATE***
Federal Facilities Agreement Signed	November 1991
Management Plan	March 1, 1993
Remedial Investigation / Feasibility Study	December 7, 1995
Record of Decision	January 27, 1997
Remedial Design / Action Scope of Work	April 15, 1997
Remedial Action Report	May 15, 1998
First Five-Year Remedy Review	October 20, 1998
Second Five-Year Remedy Review	December 17, 2003
Explanation of Significant Differences	March 2007



Site Description

Location: Operable Unit 6 consists of six source areas (LF02, LF03, LF04, SD15, WP14, and SD73) LF04 is an old landfill that was used from 1945 to 1957. SD15 and WP14 are old petroleum, oil, and waste lubricant disposal sites. LF02 and LF03 are old abandoned landfills. SD73 is an area that consists of surface drains in a building once used as a rock testing laboratory and a surface disposal area next to the building.

Contamination Overview: The Operable Unit 6 Record of Decision (ROD) was signed in January, 1997. The selected remedies for Operable Unit 6 include groundwater sampling at LF04, SD15, and WP14; free product recovery at WP14, debris removal on the beach adjacent to LF04; and soil and groundwater treatment at SD15 by high-vacuum extraction process. At LF02, a limited cover will be applied in three areas contaminated with lead, landfill debris protruding from the ground surface will be removed, and groundwater will be monitored. Additionally, land use controls at LF02, LF03, LF04, SD15, and WP14 prohibit the use of the shallow aquifer.

Basis for the Significant Differences

Discontinuing High-Vacuum Extraction at SD15: High-vacuum extraction (HVE) uses a large blower to extract contaminants from groundwater by applying a vacuum at locations around the site. Over the past 9 years, the HVE system at SD15 has reduced contaminant concentrations in groundwater by over 90% at some locations. However, the mass recovery of contaminants, or the removal of contaminants from the groundwater, at SD15 has steadily declined to a point where the HVE system has reached its technological limit and is no longer effective at removing contaminants from groundwater. Based on these conclusions, this ESD shifts focus from HVE to a phase using monitored natural attenuation (MNA) to reduce remaining contaminant concentrations in the perched groundwater at SD15. MNA is a process whereby the remaining contaminants are reduced by processes occurring naturally in the groundwater and monitored for effectiveness.

Revised Remediation Goal for 1,1,2,2-Tetrachloroethane at LF02 and SD15: During preparation of the ROD, no federally or state mandated cleanup level was established for 1,1,2,2-tetrachloroethane in groundwater. At SD15, cleanup of 1,1,2,2-tetrachloroethane was considered to be complete when all other volatile organic compounds have met their federal drinking water standards. At LF02, a risk-based level of 0.43 µg/L was established as the cleanup goal. Since the ROD was signed, a cleanup level of 4 µg/L was established by the State. This cleanup level is considered to be protective of public health and the environment.

Clarification of Land Use Controls: In 2003, the USAF published guidance requiring documentation of land use controls (LUCs) in administrative documents such as the ROD. LUCs are part of the selected remedy in the ROD for five of the seven sites at OU 6. This ESD uses the 2003 guidance to clarify how the USAF has implemented the LUCs at sites LF02, LF03, LF04, WP14, and SD15.

Implementation of the Significant Differences

This section describes how these clarifications will impact Operable Unit 6.

Discontinuing High-Vacuum Extraction at SD15: Based on data that show the HVE system is no longer effective at removing contaminants, system operations can be discontinued. Monitoring the contaminant plume and natural attenuation parameters will continue until the groundwater cleanup goals are reached. The change in remedy is expected to reduce operation, maintenance, and monitoring costs in the future. The ROD originally stated that groundwater would be cleaned-up in five years (approximately 2002). Groundwater cleanup standards are now expected to be met at all wells by 2015. The protectiveness of the remedy remains unchanged.

Revised Remediation Goal for 1,1,2,2-Tetrachloroethane at LF02 and SD15: Groundwater remaining above cleanup levels will continue to be monitored and evaluated on an as-needed basis to assess contaminant migration to provide an early indication of unforeseen environmental or human health risk. Groundwater monitoring will be discontinued if contaminant levels are below cleanup levels during two consecutive annual monitoring events. The change in remedy is not expected to reduce operation, maintenance, and monitoring costs in the future. The change in remedy will not affect the outcome contemplated in the ROD for SD15 or LF02. Time to reach groundwater cleanup goals at LF02 is not expected to change. The protectiveness of the remedy remains unchanged.

Clarification of Land Use Controls: Specific measures have been implemented to restrict access and limit exposure and use of contaminated groundwater and soil at Operable Unit 6. The Air Force conducts periodic monitoring and has plans in place to take prompt action to restore, repair, or correct any LUC deficiencies or failures identified at Operable Unit 6. The LUCs shall remain in place until the concentrations of hazardous substances in the soil and groundwater are at such levels to allow for unrestricted use and exposure. The change in remedy will not affect the outcome contemplated in the ROD for any site at Operable Unit 6.

Summary

Considering the new information that has been developed, and the clarifications that have been made to the selected remedies and in accordance with CERCLA Section 121, the Air Force, EPA, and ADEC believe that the remedies remain protective of human health and the environment, comply with federal and state requirements that were identified in the ROD as applicable or relevant and appropriate to these remedial actions at the time of the ROD, and are cost-effective. In addition, the revised remedies continue to utilize permanent solutions and alternative treatment technologies to the maximum extent practicable.

Information Repository

Documents associated with these project activities are available for public review at:

Alaska Resources Library & Information Services
(ARLIS)
3211 Providence Drive
Anchorage, AK 99508
(907) 272-7547

For additional information, please contact 3rd Wing Public Affairs by telephone at (907) 552-8152, or at 10480 22nd Street, Suite 120, Elmendorf AFB, AK 99506-2500.